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Defocus

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Textile Innovations, Couture Techniques, Ready-To-Wear

Bust – 35 inches, Waist, 26 inches, Full Hip – 36 inches

Biomimicry is an approach to innovation that seeks to improve human life by emulating nature's time-tested patterns and strategies. The Theory of Biomimicry, as referenced by Eadie & Ghosh in their 2011 study, *Biomimicry in Textiles: Past, Present, and Potential,* has become a blossoming source of inspiration for designers of many mediums, including architecture, textiles, technology, and fashion. The invention of Velcro is an excellent example of biomimicry in fashion. Velcro was conceptualized after the inventor noticed burrs stuck to his trousers and his dog's fur, which led to his creation of a new hook and loop fastening device, Velcro. Nature has already solved many of the problems with which we grapple. It is simply up to us to pay attention.

Defocus is part of a collection that uses creative research methods to marry science, technology, fiber arts and design, by investigating methods that nature (i.e., plant life, animals, etc.) has developed to overcome challenges and to adapt to the environment. This collection tests the influences that science and nature have on clothing aesthetics and how this positively affects the life of the wearer. The silhouettes, textures, patterns, and colors of these garments were inspired by methods of protection utilized by insects. Some characteristics in the collection include the interpretation of the chitinous exoskeleton and the compound eye in the design of flat patterns and the garment construction.

Defocus highlights the unusual vision of the jumping spider. Jumping spiders, which hunt by pouncing on their prey, gauge distances to their unsuspecting meals in a way that appears to be unique in the animal kingdom (Nagata, Koyanagi, Tsukamoto, Saeki, Isono, Shichida, Tokunaga, Kinoshits, Arikawa, & Terakita, 2012). Researchers in Japan have now discovered that the arachnids accurately sense distances by comparing a blurry version of an image with a clear one, a method called image defocus.

The aesthetic goal of this garment is to put the viewer into the perspective of the spider. My design process began by exploring different ways to force the viewer's eyes to defocus. By layering textiles of different colors, textures, and patterns, the viewer's eyes initially become overloaded with information, creating a blurred effect. However, as the viewer's eyes refocus and notice each layer separately, the differences become clear. This is represented by the separating layers near the hem of the dress.

Another significant aspect of this biomimicry collection is the creation and development of original textiles by modeling color and texture after biological entities and processes. These imitations are achieved through fabric manipulation, printing, dyeing, and surface design techniques. Nature is full of excellent examples of building with fibres. Cobwebs formed by certain species of spiders serve as an example. These are made up of short irregular strands of fibres arranged almost randomly while the

orb-webs made by other species of spiders are regular, elegant and elaborate (Eadie & Ghosh, 2011). The top most layer of the ensemble was designed to imitate a cobweb. The pattern was first designed in Adobe Illustrator and later laser cut into leather. Small shapes were subtracted from the textile to create an irregular, organic pattern used to confuse the eye. Thin, solid strips of leather were used to connect the pattern pieces and construct the garment, since there was very little seam allowance with which to work.

Three more layers were used to construct the dress underneath the leather; a sheer blue organza layer used to distort the print underneath, a geometric printed layer, and a textured layer. The small shapes removed form the leather were saved and used to create depth on the bottom most layer of the garment. Each shape was stitched individually onto the surface of the garment to create an unusual fringe, which will allow for movement when worn.

Nature is a fascinating resource for problem solving. Animals, plants and microbes have conducted billions of years of research and development, and the secret to survival surrounds us. This field is growing quickly and would be a beneficial topics for other designers and researchers to investigate.

References

Eadie, L. & Ghosh, T. K. (2011). Biomimicry in textiles: past, present and potential. *Journal of the Royal Society Interface,* DOI: 10.1098/rsif.2010.0487.

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